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Road vehicles — Rear load carrier devices —

Part 4: Bicycle carriers

Véhicules routiers — Dispositif porte-charges arrière —

Partie 4: Porte-vélos

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15263 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 14, *Exterior fittings*.

Road vehicles — Rear load carrier devices —

Part 4:
Bicycle carriers

1 Scope

ISO 15263 specifies the minimum safety requirements for rear bicycle carrier devices intended for fitment on the rears of passenger cars and light commercial vehicles with a maximum authorised total mass up to 3,5 t as defined in ISO 1176.

It establishes technical specifications and test methods, which offer both the users of the rear bicycle carrier devices and road users, a minimum level of safety when the rear bicycle carrier devices are being used in accordance with the manufacturer instructions.

Moreover, the requirements of ISO 15263 complement the provisions of Directive 74/483/EEC and its successive amendments concerning these products.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1176:1996, *Road vehicles – Masses – Vocabulary and Codes*

ISO 9227:1990, *Corrosion tests in artificial atmospheres – Salt spray tests*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
rear bicycles carrier
any device intended for carrying bicycle(s) on rear of a vehicle. A non exhaustive list of examples is given in annex A figures A1 to A10

a) rear bicycles carrier devices fitted on the trunk
rear carrier device designed to carry bicycles on the trunk of a vehicle. A non exhaustive list of examples is given in annex A figures A3 and A4

b) rear bicycles carriers devices fitted on the hatch
rear carrier device designed to carry bicycles on the hatch of a vehicle. A non exhaustive list of examples is given in annex A figures A5 and A6

c) rear bicycle carrier devices fitted on towing ball or plate
rear carrier device designed to carry bicycles on the towing ball or plate of a vehicle. A non exhaustive list of examples is given in annex A figures A7 and A8

d) rear bicycle carrier devices fitted on spare wheel
rear carrier device designed to carry bicycles on the spare wheel. A non exhaustive list of examples is given in annex A figures A9

e) rear bicycle carrier devices fitted on chassis
rear carrier device designed to carry bicycles on the chassis of a vehicle. A non exhaustive list of examples is given in annex A figures A10

3.2
maximum rear bicycle carrier device capacity, N_c

maximum rear bicycle carrier capacity expressed as a number of bicycles as defined by the rear bicycle carrier device manufacturer

3.3
mass of the test bicycle, m_{tb}

conventional mass of representative test bicycle, in kilograms

3.4
lifting force, F_a

force applied during testing to simulate the vertical components of the force caused by the upward, + F_a , and the downward, - F_a , vertical effect of the load as defined in figure 1, in Newtons

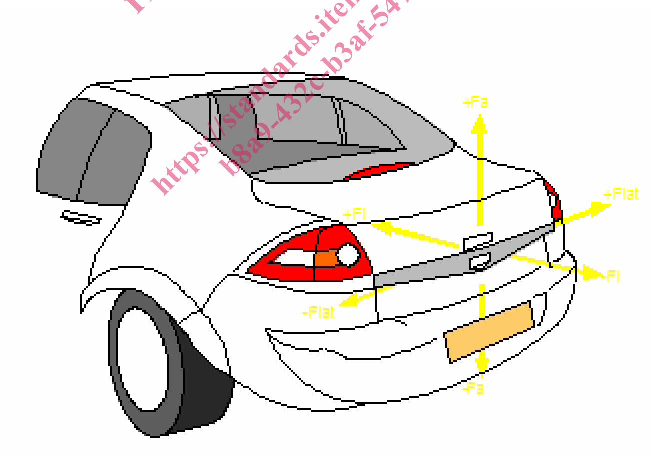

Figure 1 — Application points of F_a, F_l, F_{lat} forces

NOTE The application points of the forces F_a, F_l, F_{lat} are given in reference to the tridimensional reference system the schema of which is given in annex B

3.5
longitudinal force, F_l

longitudinal force applied during testing to simulate the horizontal components of the front, +F_l, and the rear, F_l , forces caused by the load as defined in figure 1, in Newtons.

3.6
lateral slide force, F_{lat}

force applied during testing to simulate the horizontal components of the right, $-F_{lat}$, and left, $+F_{lat}$, lateral forces caused by the load as defined in figure 1, in Newtons

3.7
strap elongation force (textile srtaps, belt, metallic straps), F_s

force applied during testing to simulate the elongation effort caused by the load to the straps, in Newtons

3.8
residual deflection in a given point, *D*

difference between the position before and after each steps of the test, of the contact points of the rear-bicycles carrier to vehicle, measured in millimetres

NOTE a contact point can be a supporting point, a fixation point or all other connecting points

3.9
displacement of the bicycle, *d*
difference between the position before and after each steps of the test, of each bicycle on the bicycle support at each contacting points, measured in millimetres

3.10
relative displacement of the internal components of rear-bicycles carrier devices, *e*
difference between the position before and after each steps of the test, of the component ensuring the interface with the vehicle and the component of the rear bicycle carrier on which it is fitted, measured in millimetres

4 Requirements

4.1 Lighting – Signalling

If light devices are significantly hidden by the rear bicycle carrier or by the bicycle (s) itself, examples are given in informative annex C, The manufacturer shall advise the costumer by a warning in instructions of use (see 9.3) to duplicate the corresponding light devices on the rear bicycle carrier, except the third brake lamp and reversing lights.

IMPORTANT — All rear lights shall be type approved according to national regulation

WARNING — In any case, national law shall be taken into account while using the carrier. The manufacturer shall advise the costumer by a warning in instructions of use accordingly.

SAFETY PRECAUTIONS — When a lighting – signalling system is duplicated, it is important that the electrical connexions shall be made in accordance with the state of the art and the recommendation of the vehicle manufacturer.

4.2 Rear license plate

If the license plate is partly hidden by the rear bicycle carrier or by the bicycle(s) itself, it is necessary to mount it visible or duplicate (depending national regulation) it on the rear bicycle carrier, examples are given in informative annex D. The manufacturer shall advise the costumer by a warning in instructions of use (see 9.3) to duplicate the license plate and its lighting devices on the rear bicycle carrier.

WARNING — In any case, national law shall be taken into account while using the carrier. The manufacturer shall advise the costumer by a warning in instructions of use accordingly.

WARNING — License plate dimensions and lighting system shall be according to national regulations.

4.3 Resistance to corrosion

When tested in accordance with 7.8, no active corrosion[1)] of functional parts shall appear during the test.

4.4 Resistance of materials

The materials used shall allow the rear bicycle carrier device to fulfil the requirements of 4.6 to 4.8 stated in a range of exterior temperature between –20ºC to +60ºC.

This shall be shown by one of the following methods:

a) material certification and report[2)] showing that the design is suitable for the intended purposes;

b) by direct testing under above mentioned extreme conditions, according to clause 7;

c) reference to applicable material standards.

4.5 Overhang and external shape

The external radius of all contactable components shall conform to EEC Directive 74/483 including all amendments. In any case, national law shall be taken into account while using the rear bicycles carrier.

4.6 Resistance to the lifting force, F_a

When tested in accordance with 7.6, on completion of the test under F_a, the following requirements shall be met:

a) The bicycles shall remain fixed on the rear bicycle carrier;

b) The bicycles and the rear bicycle carrier shall remain fixed on the test device;

c) No braking of parts shall occur;

d) The liaison between the rear bicycle carrier and the vehicle shall not be reduced. Residual deflection, *D*, shall not exceed 20 mm and for rear bicycles carrier fitted on towing ball 3° for δ, α and β;

e) Residual deflection, *d*, shall not exceed 20 mm;

f) Residual deflection, *e*, of the components at the interface between the rear bicycles carrier and the vehicle shall not exceed 5 mm;

g) Permanent deformation of the main functional parts (i.e. no cosmetic parts) shall not exceed 5% of the length of the elements, except for straps (textile straps, belt, metallic straps) which are checked according to 4.11;

h) The sliding of each strap[3)] in its blocking devices shall not exceed 2 mm.

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1) For example, zinc oxyde and alumina are note consider as active corrosion sign

2) For example, technical specification of the material or sample provided by the manufacturer or attestation from the manufacturer

3) For example, straps used for fixing the bicycles on the rear bicycles carrier device, the rear bicycle carrier device on the vehicle…

NOTE Examples of measurement of displacement is given in annex H

4.7 Resistance to the longitudinal force, F_l

When tested in accordance with 7.6, on completion of the test under F_l, the following requirements shall be met:

a) The bicycles shall remain fixed on the rear bicycle carrier;

b) The bicycles and the rear bicycle carrier shall remain fixed on the test device;

c) No braking of parts shall occur;

d) The liaison between the rear bicycle carrier and the vehicle shall not be reduced. Residual deflection, *D*, shall not exceed 20 mm and for rear carrier bicycles fitted on towing ball 3° for δ, α and β;

e) Residual deflection, *d*, shall not exceed 20 mm;

f) Residual deflection, *e*, of the components at the interface between the rear bicycles carrier and the vehicle shall not exceed 5 mm;

g) Permanent deformation of the main functional parts (i.e. no cosmetic parts) shall not exceed 5% of the length of the elements, except for straps (textile straps, belt, metallic straps) which are checked according to 4.11;

h) The sliding of each strap[4)] in its blocking devices shall not exceed 2 mm.

NOTE Examples of measurement of displacement is given in annex H

When tested in accordance with 7.6, on completion of the test under F_{lat}, the following requirements shall be met:

a) The bicycles shall remain fixed on the rear bicycle carrier;

b) The bicycles and the rear bicycle carrier shall remain fixed on the test device;

c) No braking of parts shall occur;

d) The liaison between the rear bicycle carrier and the vehicle shall not be reduced. Residual deflection, *D*, shall not exceed 20 mm and for rear carrier bicycles fitted on towing ball 3° for δ, α and β;

e) Residual deflection, *d*, shall not exceed 20 mm;

f) Residual deflection, *e*, of the components at the interface between the rear bicycles carrier and the vehicle shall not exceed 5 mm;

g) Permanent deformation of the main functional parts (i.e. no cosmetic parts) shall not exceed 5% of the length of the elements, except for straps (textile straps, belt, metallic straps) which are checked according to 4.11;

h) The sliding of each strap[5)] in its blocking devices shall not exceed 2 mm.

4) For example, straps used for fixing the bicycles on the rear bicycles carrier device, the rear bicycle carrier device on the vehicle…

5) For example, straps used for fixing the bicycles on the rear bicycles carrier device, the rear bicycle carrier device on the vehicle…

NOTE Examples of measurement of displacement is given in annex H

4.8 Resistance when running on a sleeping policeman

When tested in accordance with 7.5, on completion of the test, the following requirements shall be met:

a) The bicycles shall remain fixed on the rear bicycle carrier;

b) The bicycles and the rear bicycle carrier shall remain fixed on the vehicle;

c) No braking of parts shall occur;

d) The liaison between the rear bicycle carrier and the vehicle shall not be reduced. Residual deflection, *D*, shall not exceed 20 mm and for rear carrier bicycles fitted on towing ball 3° for δ, α and β;

e) Residual deflection, *d*, shall not exceed 20 mm;

f) Residual deflection, *e*, of the components at the interface between the rear bicycles carrier and the vehicle shall not exceed 5 mm;

g) Permanent deformation of the main functional parts (i.e. no cosmetic parts) shall not exceed 5% of the length of the elements, except for straps (textile straps, belt, metallic straps) which are checked according to 4.11;

h) The sliding of each strap in its blocking devices shall not exceed 2 mm;

i) The bicycle(s) and the rear bicycles carrier shall not hit the ground during the test.

NOTE Examples of measurement of displacement is given in annex H

NOTE As an alternative, a test bench method can be used if the equivalency with the described road test is demonstrated for the rear bicycles carriers

4.9 Resistance when running on Belgium blocks

When tested in accordance with 7.5, on completion of the test, the following requirements shall be met:

a) The bicycles shall remain fixed on the rear bicycle carrier;

b) The bicycles and the rear bicycle carrier shall remain fixed on the vehicle;

c) No braking of parts shall occur;

d) The liaison between the rear bicycle carrier and the vehicle shall not be reduced. Residual deflection, *D*, shall not exceed 20 mm and for rear carrier bicycles fitted on towing ball 3° for δ, α and β;

e) Residual deflection, *d*, shall not exceed 20 mm;

f) Residual deflection, *e*, of the components at the interface between the rear bicycles carrier and the vehicle shall not exceed 5 mm;

g) Permanent deformation of the main functional parts (i.e. no cosmetic parts) shall not exceed 5% of the length of the elements, except for straps (textile straps, belt, metallic straps) which are checked according to 4.11;

h) The sliding of each strap in its blocking devices shall not exceed 2 mm;

NOTE Examples of measurement of displacement are given in annex H